1. Final Machine-readable form.

The support ring 14 may be formed out of any desired material including metallic and suitable non-metallic substances.

The raised portion 16 provides a number of substantial benefits to the receptacle connector 10. All known prior art connector devices that use any type of a structural ring (similar to the ring 14 but without the raised portion 16) to provide an improvement in structural rigidity and where the structural ring is embedded in a connector proximate the lip 12 and surrounded by an elastomer must include an exposed side thereof that is disposed on either an outside circumference or on an inside circumference.

In other words, the outside circumferential surface of the structural ring of all prior art types of connectors is flush with the outside (OD) of the connector 10 or, alternatively, the inside circumferential surface is flush with the inside (ID) of the connector 10. It has to be in order to ensure that the structural ring is properly positioned proximate the lip 12. During the molding process the elastomer (rubber) is forced into the mold at extremely

high pressures. There is no way to ensure that the structural ring would remain in its proper position if it were not secured from the outside. Normally pins or a ridge in the outside of the mold cavity maintain the structural ring in position during the molding process. The rest of the structural ring can then be or remain embedded in the elastomer, as desired. However, one surface must be exposed.

The problem with this is that the elastomer shifts, bends, and may even fold over during insertion of the remaining mating connector half. In particular, the molded-in O-ring that is disposed on the outside of the mating male connector half tends to bear on the inside of the elastomeric lip 12 during insertion and removal which then tends to cause the lip 12 to shift and possibly to fold over. In particular the force exerted by the molded-in O-ring is transmitted through the elastomer to the structural ring. Accordingly, the force tends to displace the structural ring from side to side thereby wearing the elastomer at the edges that tends to hold it in position. This shifting and folding tends to loosen and eventually it can contribute to the structural ring becoming so loosened that it can dislodge itself from the lip 12. This occurs primarily because the structural ring has either its inner or its outer circumferential surface totally exposed.

If one were to attempt to embed all sides of the structural ring in the elastomer, which would prevent it from being dislodged, then the structural ring would shift dramatically during the molding process. It would become either skewed, tilted, shifted, or radically displaced away from where it is desired to be in the finished molded connector lip 12.

B1 The raised portion 16 of the instant invention is disposed along the center of the outside circumference of the ring 14. By using a ridge (or pins) in the mold cavity, the ring 14 is maintained in its proper position during the molding process. In particular, the outer circumference of the ring 14 is assured of being embedded in the elastomer. This provides the especially valuable benefit of retaining the ring 14 in perfect position in the elastomer during the molding process.

The raised portion 16 also ensures that there will be a uniform depositing (i.e., an even thickness) of the elastomer deposited over the top circumference of the ring 14 on both sides of the raised portion 16. This prevents the ring 14 from shifting and wearing the elastomer proximate the radius edges 18.

It also positively prevents the ring 14 from being dislodged by the force of the molded-in O-ring of the mating connector.

Still yet one further benefit of the raised portion 16 is that it increases the thickness of the ring 14 in the middle where it adds even more structural strength. This increased strength occurs precisely where it is needed, namely where the O-ring will exert a steady state of force during mating of the connector. This helps maintain the environmental seal by preventing the lip 12 from being urged outward (radially) away from the O-ring of the mating half. The raised portion 16 provides increased strength to the ring 14 where it is needed most. Therefore, a thinner ring 14 is required which allows for more elastomer to encircle it.

Accordingly, the raised portion permits enclosing the outer circumference in elastomer and ensures that it cannot be dislodged while also providing increased structural rigidity.

The invention has been shown, described, and illustrated in substantial detail with reference to the

presently preferred embodiment. It will be understood by those skilled in this art that other and further changes and modifications may be made without departing from the spirit and scope of the invention which is defined by the claims appended hereto.

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2. With Edit Marking Shown to Specification Changes.

Please insert the following underlined text to the Specification on page 9 between the second and third paragraphs.

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thereof that is disposed on either the outside circumference or on an inside circumference.

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If one were to attempt to embed all sides of the structural ring in the elastomer, which would prevent it from being dislodged, then the structural ring would shift dramatically during the molding process. It would become either skewed, tilted, shifted, or radically displaced away from where it is desired to be in the finished molded connector lip 12.

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The invention has been shown, described, and illustrated in substantial detail with reference to the presently preferred embodiment. It will be understood by those skilled in this art that other and further changes and modifications may be made without departing from the spirit and scope of the invention which is defined by the claims appended hereto.

CLAIMS:

Two claim presentations are shown.

The first claim presentation includes all of the remaining claims for consideration in the case with all amendments having been made thereto. The edit markings are omitted from the first claim presentation although all